

Federal Aviation Administration AFS-205 404.832.4700	National Simulator Program Flight Simulation Training Device Qualification Guidance	Guidance Bulletin Number: 11-02	Revision 0
Title: Notification of FSTD Modification and Validation Data Updates		Effective Date: December 14, 2011	Page 1 of 10

FSTD Guidance Bulletin 11-02

Notification of FSTD Modification and Validation Data Updates

Purpose:

This Bulletin is provided to clarify FAA notification requirements with regard to FSTD Modification and Validation Data in accordance with 14 CFR Part 60, Section 60.23 and 60.13(f). A standardized Notification process and form is provided.

Scope:

This Guidance Bulletin provides an acceptable means, but not the only means of compliance with Title 14 Code of Federal Regulations (CFR) Part 60 pertaining to the Evaluation and Qualification of Flight Simulation Training Devices (FSTD) for use in FAA Approved Flight Training Programs. If an applicant chooses to utilize the approach described within this Guidance Bulletin, that applicant must adhere to all methods, procedures, and standards herein. Should an applicant desire to use another means, a proposal must be submitted to the National Simulator Program Manager (NSPM) for review and approval prior to implementation. This Guidance Bulletin does not change regulatory requirements or create additional ones, and does not authorize changes in, or deviations from, regulatory requirements.

Approval: Harlan G. Sparrow III
National Simulator Program Manager

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REVISION HISTORY		
Rev	Description of Change	Effective Date
0	Original	12/14/2011

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1. Background

In accordance with §60.11(d), Flight Simulator Training Devices (FSTDs) are required to function during day-to day training, evaluation, or flight experience activities with the hardware and software that was evaluated as satisfactory by the National Simulator Program Manager (NSPM). History demonstrates, however, that over its lifetime, modification of an FSTD will be inevitable as technologies and training requirements evolve. Reasons for FSTD modification could include such items as changes to the FSTD Validation Data Package, an FAA Airworthiness Directive (AD) that affects the flight/ground dynamics or the performance/handling characteristics of the FSTD, an FSTD Directive (FD) issued by the NSPM, or changes to the operator's aircraft fleet that would affect that operator's training program and FSTD requirements. In accordance with sections §60.23(c) and §60.13(f) of the rule, these changes must be reported to the National Simulator Program (NSP) and/or the Training Program Approval Authority (TPAA).

2. When does the FAA need to be notified?

2.1. **Validation Data:** As required by §60.13(f) and QPS Appendices A, B, C, and D, section 9(d.), the sponsor must notify the NSPM when he or she becomes aware that an addition to, an amendment to, or a revision of data that may relate to FSTD performance or handling characteristics is available. Such data is used to validate performance, handling qualities, or other characteristics of the aircraft including data related to any relevant changes occurring after the type certificate was issued (See Attachment 1 of this document for types of validation data).

The sponsor must:

- Within 10 calendar days, notify the NSPM of the existence of this data; and,
- Within 45 days notify the NSPM of the schedule to incorporate this data, or the reason for not incorporating this data into the FSTD.

The NSP will generally not respond to a Data Notification, but may request clarifying information.

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2.2. **Modifications to an FSTD:** Prior to using a modified FSTD, sponsors are required to simultaneously notify the NSPM and the TPAA. Not all changes to an FSTD are considered modifications. Per §60.23, an FSTD is said to have been modified when:

- Equipment or devices intended to simulate aircraft appliances are added to or removed from FSTD, which change the Statement of Qualification or the MQTG; or
- Changes are made to either software or hardware that are intended to impact flight or ground dynamics;
- Changes are made that impact performance or handling characteristics of the FSTD (including motion, visual, control loading, or sound systems for those FSTD levels requiring sound tests and measurements); or
- Changes are made to the MQTG¹

Once it has been determined that a modification will be made to an FSTD, the sponsor must notify the FAA prior to using the modified FSTD as described below in 2.2.1.

2.2.1. **Using a Modified FSTD:** In accordance with §60.23(c), Sponsors may not use, allow use of, or offer for use, a modified FSTD for flight crewmember training, evaluation, or for obtaining flight experience unless the sponsor has notified the NSPM and the TPAA of their intent to incorporate the proposed modification and one of the following has occurred:

- Twenty-one days have passed since the sponsor notified the NSPM and the TPAA of the proposed modification and the sponsor has not received any response from either the NSPM or the TPAA; or
- Twenty-one days have passed since the sponsor notified the NSPM and the TPAA of the proposed modification and one

¹ See section 3.3 of this document with regard to types of MQTG changes.

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has approved the proposed modification and the other has not responded; or

- Fewer than than Twenty-one days have passed since the sponsor notified the NSPM and the TPAA of the proposed modification and the NSPM and the TPAA both approve the proposed modification;
- The sponsor or the FAA has successfully completed any evaluation* that the NSPM may require in accordance with the standards for an evaluation for initial qualification or any part thereof before the modified FSTD is placed in service.

*For planning purposes, if an NSP evaluation is anticipated as a result of the proposed modification, it is recommended that the notification be provided to the NSP as soon as possible.

3. When the FAA Does Not Require Notification

Certain circumstances may not necessarily require notification. This section addresses these circumstances. If unsure, Sponsors are encouraged to contact the NSP for assistance in making any determination to provide notification.

3.1. NSP Discrepancy Corrections: When an FSTD modification is planned to correct an NSP originated discrepancy, the notification described in §60.23 is not required since the NSP has requested the action to correct a deficiency. In this case, the sponsor should provide details of the modification in the FSTD Evaluation Report upon discrepancy closure. The sponsor's TPAA will be advised of the action in the FSTD Evaluation Report.

3.2. Routine Hardware or Software Changes: Changes of this nature are required to maintain the FSTD in its operating state as evaluated by the NSP. Routine changes not requiring notification also include those related to updates in the real-world. Examples of either include:

- Flight Control or Motion Calibration
- Instrument or equipment Calibration

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- Replacing a defective component with a spare or suitable replacement that maintains the same system functionality, and does not change the design architecture or performance of the FSTD.
- Updates to Radio Aids Database or Terrain Database
- FMS Nav Data updates
- Updates to Visual Model Scenes²

3.3. MQTG Editorial Changes: Such changes are limited to those that would not have any material impact on the MQTG content, testing procedures therein, or on the FSTD. Examples of editorial changes not requiring FAA notification include:

- Repagination
- Correction of typographical or grammatical errors
- Typesetting or other change that would not materially affect the MQTG
- Improving the clarity of a test procedure
- Presenting additional parameters on test results

All MQTG changes, however, are subject to entry in the MQTG Revision History.

3.4 Forty-Five Day Data Notification: [QPS Appendices A, B, C, and D section 9(d)(2)] If the sponsor has elected to incorporate new validation data and that modification to the FSTD is to be implemented in a relatively short period of time, the notification may be combined with the modification notification.

² While there are no requirements for notification, sponsors must comply with time constraints in making changes to airport models (See QPS Appx. A, Att.3, para.1.f). Requests for extensions should be made using the MMI field on the most recent FSTD Evaluation Report.

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4. What are the Notification Procedures?

The NSP has provided a standardized notification form, T011, found on the NSP webpage, <http://www.faa.gov/about/initiatives/nsp/forms/> to be used for validation data or modification notifications. Sponsors should complete the form and forward as an email attachment to the sponsor's TPAA, and the NSP scheduler at 9-aso-afs205-nsp-simulator-scheduling@faa.gov. The email subject line should identify the correspondence as an FSTD Sponsor Notification and state the FSTD FAA ID number(s). As an example:

FAA ID# 1234 – FSTD Sponsor Notification

If the notification pertains to an FSTD modification, the notification must state the reason for the modification and a complete description of the planned modification. The notification should also describe the operational and engineering effect that the proposed modification will have on the operation of the FSTD and the results that are expected with the modification incorporated³. If the proposed modification affects MQTG test results, these results should be submitted along with pre-modification test results for NSP comparison. The sponsor must also provide a statement (letter of compliance) signed by the Management Representative (MR) that the factors listed in §60.15(b) are addressed by the appropriate personnel as described in that section⁴. A sample compliance letter can be found on the NSP website at: <http://www.faa.gov/about/initiatives/nsp/forms/>

³ QPS Appendix, paragraph 17

⁴ The compliance letter pertains to FSTD modifications only.

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Process Flow Chart: None

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Attachments:

Attachment 1: Validation Data

Some question has arisen among sponsors concerning “Validation Data” as referenced in §60.13. For instance, is the reference limited to that data used in the validation of an FSTD’s Master Qualification Test Guide (MQTG), or does it include other objective data that may not have a direct impact on the MQTG? Additionally, clarification was requested concerning the verbiage “...or other characteristics of the aircraft” as used in QPS Appendices A, B, C, and D of Part 60.

A review of the rule language and preamble⁵ to the Part 60 rule was conducted to determine the intent of the rulemaking committee with respect to this requirement. The following observations were made:

- §60.13(f) does not differentiate between validation data and data used in the aerodynamic and ground reaction models that define the FSTD performance or handling characteristics. This would imply that any changes to the model that affect performance and handling qualities would be subject to reporting.
- §60.13(a) distinguishes “other characteristics of the aircraft” as those characteristics that “must be considered for flight crewmember training, evaluation, or for meeting experience requirements”.
- The preamble material clearly states that “the data providers need only provide notice for data relating to the handling and performance of the FSTD”.⁶
- QPS Appendices A, B, C, and D, paragraph 9.d. refers to both “data used to validate” and “data related to any relevant changes occurring after the type certificate was issued”.

⁵ Federal Register, Volume 71, No. 209, Monday, October 30, 2006.

⁶ Federal Register, Volume 71, No. 209, Page 63411, Monday, October 30, 2006.

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NSP Policy: Based upon this information, it is expected that the following objective data updates should be reported to the NSPM in accordance with §60.13(f):

- Revisions to the aerodynamic and/or ground mathematical models which will directly affect the performance and handling qualities of the FSTD.
- Revisions to the validation data used in the FAA approved MQTG of the FSTD. This validation data is limited to only those tests in the performance and handling qualities section of the MQTG.
- Revisions of avionics and/or simulated avionics which will directly affect the performance and handling qualities of the FSTD and/or the required performance and handling qualities MQTG tests (e.g. fly by wire avionics systems).
- Data revisions relating to “other characteristics of the aircraft” are interpreted to mean revisions to any objective data that was modified with the intent to address problems in completing training tasks that “must be considered for flight crewmember training, evaluation, or for meeting experience requirements”.

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